

Study on Curative Effect of Kazakh Drug Hot Application Therapy in Treating Knee Osteoarthritis

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Abstract

Objective: To understand the symptoms of wind knee osteoarthritis, and to explore the clinical effect of Kazakh medicine drug hot application therapy on patients with wind knee osteoarthritis. **Methods:** 80 patients with knee osteoarthritis admitted from January 2021 to January 2022 were selected as the subjects of this study. 80 patients with knee osteoarthritis included in the study were randomly divided into treatment group and control group, 40 cases / group. The patients in the control group only received routine treatment during the trial, and the patients in the treatment group were treated with Kazakh medicine combined with hot baking therapy. After two courses of treatment, compared two groups of patients with osteoarthritis (WOMAC) score, knee mobility, knee function LKSS evaluation scale and Lequesne index score, and after the end of treatment compared two groups of patients. **Results:** WOMAC score, knee range of motion, knee function LKSS evaluation scale and Lequesne index score, as well as the end of treatment compared to the two groups were better than the control group ($P < 0.05$). **Conclusion:** Compared with the single treatment method of other groups, the heat drying method of Kazakh medicine can improve the comprehensive level of prognosis of patients, with better clinical efficacy, green pollution-free and high safety.

Keywords

Kazakh Medicine, Drug Hot Application Therapy, Knee Osteoarthritis, Clinical Efficacy

Introduction

The Kazakh nation has long lived in alpine areas such as northern Xinjiang. Due to its unique natural environment and lifestyle, the Kazakh people are prone to osteoarthritis. Among them, knee osteoarthritis (KOA) is a very common disease in the clinic of the Kazakh nation. As a chronic disease in clinical practice, the disease is mainly based on degenerative lesions of articular cartilage. It occurs in people over the age of 40. The clinical manifestations of patients are knee pain, knee joint dysfunction, difficulty in movement, knee joint swelling or deformity and other symptoms. Western medicine research believes that the pathogenesis of the disease is a very complex process. It is the result of multiple factors and is a joint failure syndrome. Its essence is a biomechanical reconstruction process. It is the disorder of dynamic balance between metabolism and mechanical wear caused by the

interaction of biological factors and mechanical damage. The pathological process may be the result of the joint regulation of various bioactive substances. Knee osteoarthritis seriously threatens the life and health of the elderly, resulting in a decline in the quality of life of patients [1]. As a chronic progressive disease, clinical hormone drugs to give patients more treatment, and drug taking time is longer, capacity for patients to organ function damage. Chinese medicine in the treatment of the disease has formed a more systematic approach, Chinese medicine using dialectical therapy for different types of disease using different therapies. Which Kazakh medicine hot baking therapy is very common method of treatment of arthritis, and green non-toxic.

1. Data and Methods

1.1 General information

This experimental study took 80 patients with knee osteoarthritis treated in our hospital from January 2021 to January 2022 as the research object. 80 patients with knee osteoarthritis included in the study were randomly divided into treatment group and control group, 40 cases / group. The patients in the control group only received routine treatment during the experiment, and the patients in the treatment group were treated with Kazakh medicine hot baking therapy. According to statistics, there were 22 males and 18 females in the treatment group. The age of the patients ranged from 48 to 71 years, with an average age of (57.32 ± 3.61) years. The course of disease ranged from 1 to 8 years, with an average course of (4.32 ± 2.61) years. In the control group, there were 26 males and 14 females, aged between 42 and 75 years old, with an average age of (57.32 ± 3.61) years old. The course of disease was between 1 and 10 years, and the average course of disease was (4.69 ± 3.28) years. Inclusion criteria: (1) Inclusion criteria : in line with the 'Osteoarthritis Diagnosis and Treatment Guidelines 2018 Edition'; (2) Aged 40-75 years; (3) patients with cognitive, good compliance; (4) belongs to the traditional Chinese medicine wind cold dampness type; (5) Learn about this study and sign the informed consent form. All the above conditions must be met at the same time for inclusion. Exclusion criteria: (1) Infectious knee arthritis; (2) intra-articular injection or use of non-steroidal anti-inflammatory drugs within 2 months; (3) combined rheumatoid arthritis and other rheumatic immune system diseases; (4) Congenital knee deformity; (5) Tumor, tuberculosis; (6) after knee arthroplasty, with severe cardiovascular and cerebrovascular diseases, blood system diseases, severe liver and kidney dysfunction; (7) those who cannot actively cooperate with functional exercise; (8) Allergic constitution. Any of the above is excluded.

Exclusion and shedding criteria: (1) those who are allergic to this drug or to multiple drugs; (2) serious side effects or serious complications during clinical trials; (3) the symptoms worsen, must take emergency measures; (4) Failure to follow the prescribed medication, unable to determine the efficacy, or incomplete data affect the efficacy and safety determination.

This study was in line with the ethical standards set by the Human Body Test Committee. All subjects were informed consent. There was no significant difference in general data between the two groups ($P > 0.05$).

1.2 Methods

After the completion of the grouping, the two groups of patients were treated with different treatment methods, respectively: treatment group: the use of Kazakh medicine hot baking treatment, once a day, continuous treatment for 2 weeks; control group: oral non-steroidal anti-inflammatory drugs, continuous treatment for 2 weeks.

1.2.1 Control group:

Meloxicam tablets 15mg, BID, oral, continuous use for 2 weeks.

1.2.2 Treatment group:

The prescription of 'Kazakh medicine hot baking therapy' comes from the empirical prescription of orthopedics and traumatology. Kazakh medicine prescription contains 30 grams of Radix Aconiti Preparata, 30 grams of Radix Aconiti Preparata, 9 grams of safflower, 30 grams of white aconite, 10 grams of Yuanhu and other Kazakh medicines. The above drugs are dried and crushed into fine powder, passing 50 mesh sieves, mixing, adding sheep oil to make oil ointment, sealed and stored. When used evenly spread on a medical cotton pad, covered with a medical gauze, paste the affected area, fixed with medical tape or elastic bandage, while using infrared therapy heating method. 1 change a day, when dressing to observe whether there is swelling allergy symptoms. Continuous use for 2 weeks. During the treatment observation period, other drugs or treatment methods that may affect the curative effect were excluded, and the patients were instructed to quit smoking and drinking, eat lightly, and reduce knee joint weight-bearing activities.

1.3 Observation indicators and methods

The WOMAC score, knee joint activity, knee function LKSS evaluation scale and Lequesne index score were observed before and after treatment. After treatment compared two groups of patient's curative effect. Indicators of controlled clinical symptoms: knee pain and swelling completely disappeared, whether there is tenderness around the joints, walking and up and down whether there is discomfort. Safety indicators: blood, urine, feces routine testing; liver and kidney function examination; skin allergy; he had adverse reactions.

1.3.1 Western Ontario McMaster University Osteoarthritis (WOMAC) score:

Including knee pain (5 indicators), stiffness (2 indicators), knee function (17 indicators). Each symptom grading score: inaction 0 points, mild 1 point, moderate 2 points, severe 3 points, severe 4 points, the higher the score, the more serious the knee joint dysfunction.

1.3.2 Evaluation of knee joint function Lysholm scale (LKSS) evaluation:

Whether the patient needs support, whether there is joint instability and joint noose, whether there is swelling, pain, lameness, whether there is difficulty in going up and down stairs and squatting, the higher the score, the better the knee joint function. Lequesne index evaluation: knee pain 0 ~ 3 points, rest pain 0 ~ 3 points, morning stiffness 0 ~ 3 points, swelling 0 ~ 3 points, walking ability 0 ~ 8 points, the higher the score, the more severe the condition.

1.3.3 Knee joint activity:

The passive activity of knee flexion, extension, internal rotation and external rotation was measured by joint activity ruler.

1.3.4 Efficacy criteria:

Clinical control: pain and other symptoms eliminated, normal knee joint activity, WOMAC scale score decreased by more than 95 %.

Markedly effective: pain and other symptoms basically eliminated, joint activity is not limited, WOMAC scale score decreased by 70 % to 95 %.

Improvement: pain and other symptoms improved, joint activity mild disorder, WOMAC scale score decreased by 30 % to 69 %.

Ineffective: no significant improvement in knee discomfort and joint activity, WOMAC scale score decreased by less than 30 %.

Knee WOMAC total score reduction percentage (%) = (total score before treatment - total score after treatment) / score after treatment

Total effective rate = (clinical control + markedly effective + improvement) / total number of cases X100 %.

1.4 Statistical methods

SPSS 22.0 was used for statistical analysis. The measurement data were expressed as $\pm s$, and the t test was used for comparison. The count data were expressed as a percentage (%), and the comparison was performed using the χ^2 test. The difference was statistically significant at $P < 0.05$.

2. Results

2.1 Comparison of WOMAC, LKSS scores and activity before and after treatment

There was no significant difference in WOMAC, LKSS scores and activity between the two groups before treatment, and both suggested that the patient's condition was more serious. After treatment, the scores of each index in the two groups were improved. Among them, the improvement of scores in the treatment group treated with Kazakh medicine hot baking therapy was better than that in the control group ($P < 0.05$).

Table 1. Comparison of WOMAC, LKSS scores and activity between the two groups before and after treatment

| group | WOMAC | | LKSS | | 活动度 | |
|-----------------|------------------|---------------|------------------|---------------|------------------|---------------|
| | before treatment | posttreatment | before treatment | posttreatment | before treatment | posttreatment |
| treatment group | 47.32±8.76 | 18.64±6.21 | 70.87±6.21 | 91.43±5.98 | 8.62±2.11 | 14.87±4.22 |
| control group | 48.01±8.58 | 23.15±5.82 | 69.95±6.42 | 85.42±6.24 | 8.24±2.51 | 11.65±4.01 |

2.2 Comparison of therapeutic effects between the two groups

The total effective rate of the treatment group was 100 %, which was significantly higher than 77.5 % of the control group ($P < 0.05$).

Table 2. Comparison of therapeutic effects between the two groups

| group | controlled clinically | persons cured | Valid | Invalid | Total effective rate (%) |
|-----------------|-----------------------|---------------|-------|---------|--------------------------|
| treatment group | 15 | 14 | 11 | 0 | 100.0% |
| control group | 3 | 10 | 18 | 9 | 77.5% |

3. Discussions

Due to the increase of China's aging population, the clinical cases of left knee osteoarthritis are also increasing. Western medicine therapy mostly adopts surgery and hormone drugs, which not only has limited curative effect, but also has great physical and mental harm to patients. Chinese medicine in the prevention and treatment of knee osteoarthritis also has some insights. The syndrome differentiation and treatment of traditional Chinese medicine has introduced knee osteoarthritis into the scope of 'arthralgia' and 'bone arthralgia'. The cognition of knee arthralgia in traditional Chinese medicine is very early, which should be traced back to the period of 'Huangdi Neijing'. The theory of arthralgia: 'wind, cold and dampness are mixed together to form arthralgia', and the arthralgia syndrome is divided into skin arthralgia, muscle arthralgia, pulse arthralgia, tendon arthralgia and bone arthralgia [2-3].

Traditional Chinese medicine advocates conservative treatment, using green non-toxic, effective method. Chinese medicine treatment mainly oral or external application of Chinese medicine, acupuncture, massage therapy and other physical therapy (such as microwave and magnetic therapy). Oral administration of traditional Chinese medicine mainly adopts the methods of promoting blood circulation and dredging collaterals, tonifying liver and kidney, and dredging collaterals. It can be used in decoctions, pills and other dosage forms to consolidate the root and eliminate pathogens, and the specimens are taken into account. However, the course of treatment is generally long, and the application is not convenient, and the patient compliance is poor. Acupuncture therapy, massage therapy and some physical therapy (such as microwave and magnetic therapy, etc.) are effective and cannot be popularized because of their high price and geographical environment [4]. The external application of traditional Chinese medicine is also more, the drug can be processed by the prescription, and there are also more varieties of ointments, which have better curative effect. In addition to a few allergic patients, the application site is prone to rash, blisters, and other allergic symptoms, which can be used. This therapy has a large space for promotion and use. In Kazakhstan, in the 'Chipagar Bayan' medical book, there have been prescriptions for the treatment of knee osteoarthritis. In this experiment, the patients were treated with Kazakh medicine's hot baking therapy, and the principle of Kazakh medicine combined with traditional Chinese medicine treatment was adopted. The prescription was based on the principle of warming cold evil and dispersing cold and tonifying yang. The prescription contains Radix Aconiti Preparata, Radix Aconiti Preparata, Flos Carthami, Radix Aconiti Preparata, Tougucao, Frankincense, Myrrh and so on. Radix Aconiti Preparata and Radix Aconiti Preparata have the effects of dispelling wind and cold, activating collaterals and relieving pain, relaxing tendons and activating blood; safflower has the effect of activating blood; white aconite, yuanhu, etc. have the effect of nourishing liver and kidney, warming tendons and yang. The combination of multiple drugs has the effect of effectively improving wind knee osteoarthritis [5].

The test results show that the Kazakh medicine drug hot application therapy treatment group WOMAC, LKSS score, and activity score were better than the control group, and the treatment effect was significantly higher. Therefore, Kazakh medicine drug hot application therapy treatment of wind knee osteoarthritis efficacy and safety are high, can be used in clinical practice.

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